

REMARKS

This application has been carefully reviewed in light of the Office Action dated August 13, 2003. Claims 1-4 remain pending in this application. Claim 1 is the independent claim. Favorable reconsideration is respectfully requested.

The Office Action rejected Claims 1-4 under 35 U.S.C. § 103(a) as being unpatentable over Hwang et al. (EU Patent 0614226; hereinafter "Hwang"), Aitken et al. (U.S. Patent No. 5,268,324; hereinafter "Aitken"), and further in view of Song (U.S. Patent No. 5,760,420). Applicant respectfully submits that the pending application and claims are patentable for at least the following reasons.

Applicant's Claim 1 recites: "A semiconductor device with an integrated CMOS circuit with NMOS and PMOS transistors having semiconductor zones which are formed in a silicon substrate and which adjoin a surface thereof, which surface is provided with a layer of gate oxide on which gate electrodes are formed at those areas of the semiconductor zones which form gate zones of these transistors, such that the gate electrodes of the PMOS transistors are formed in a layer of p-type doped polycrystalline silicon and a layer of p-type doped polycrystalline silicon-germanium ($\text{Si}_{1-x}\text{Ge}_x$; $0 < x < 1$) situated between said polycrystalline silicon layer and the

gate oxide, along with an amorphous silicon layer which is formed, characterized in that the gate electrodes of the NMOS transistors are formed in a layer of n-type doped polycrystalline silicon without germanium."

As stated in the Office Action, Hwang fails to recite or suggest: 1) amorphous silicon formed between the gate oxide layer and the layer of polycrystalline silicon; and 2) gate electrodes of the NMOS transistors are formed in a layer of N-type doped silicon without germanium.

Aitken recites a PMOS electrode with SiGe and an NMOS electrode without, however both gate electrodes are stacked directly on top of the silicon substrate 1. Song recites gate electrode 21 formed on silicon substrate 11 (see, e.g., Fig. 3). Hwang requires that both PMOS and NMOS gate electrodes be stacked on a layer of TiN. Applicant's Claim 1 recites, on line 3, "which surface [silicon substrate] is provided with a layer of gate oxide on which gate electrodes are formed..." Thus the combination of Hwang, Song, and Aitken fail to recite or suggest all the limitations of Applicant's Claim 1.

Applicant notes that M.P.E.P. § 706.02(j) states:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable

expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

In addition, Hwang and Aitken cannot be properly combined. One of ordinary skill in the art at the time of the invention would have no motivation to combine the references because Aitken contains no TiN substrate, and Hwang requires such a substrate. Further, both gate electrodes in Hwang contain germanium.

In addition, since neither Hwang nor Aitken possess any indication of motivation to combine the references, and no one of ordinary skill in the art at the time of the invention would have recognized a motivation to combine them, Claim 1 is also believed patentable since Hwang and Aitken cannot be combined without improper hindsight by "use[ing] the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention," see *In Re Denis Rouffet*, 47 USPQ.2d 1453, 1457-58 (Fed. Cir. 1998). This is an improper means by which to reject a claim.

Consequently, Applicant believes Claim 1 to be patentable over Hwang, Aitken and Song, taken separately or in any proper combination, for at least the above reasons.

Claims 2-4 depend from independent Claim 1 above and are believed patentable for at least the same reasons. However, each is also deemed to define an additional aspect of the invention, and should be individually considered on its own merits.

In view of the foregoing amendments and remarks, it is respectfully submitted that the currently-pending claims are clearly patentably distinguishable over the cited and applied references. Accordingly, entry of this amendment, reconsideration of the rejections of the claims over the references cited, and allowance of this application is earnestly solicited. Applicant's agent can be contacted at the number below.

Respectfully submitted,

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